

CLAIMS

1. Polyester irregular cross-sectional filaments,
comprising individual filaments each comprising a
polyester and having a transverse cross-sectional profile
which has:

(A) a triangular part having a triangular
form; and

(B) a flat projection part connected to an
angular portion of the triangular part and extending
therefrom in a flat form, and which cross-sectional
profile satisfies the requirements (1) and (2) shown
below:

$$0.7 \leq (L1/L2) \leq 3.0 \quad (1)$$

and

$$3.0 \leq (h2/h1) \leq 10.0 \quad (2)$$

in which requirement (1),

L1 represents a distance between a middle point of a
connection line drawn between two intersecting points of
a contour line of the triangular part (A) with contour
line of the flat projection part (B), and a projection
end point of the flat projection part (B); and L2
represents a distance between a middle point of the
connection line between the triangular part (A) and the
flat projection part (B), and a middle point of an side
line of the triangular part (A) facing the connection
line; and

in which requirement (2),

h1 represents a length of the connection line
between the triangular part (A) and the flat projection
part (B); and h2 represents a largest width of the
triangular part (A) in the direction at right angles to
the longitudinal direction of the flat projection
part (B).

2. The polyester irregular cross-sectional
filaments as claimed in claim 1, wherein the cross-
sectional profile of the individual filaments further

satisfies the requirement (3) shown below:

$$2.0 \leq (L1/h1) \quad (3)$$

3. The polyester irregular cross-sectional filaments as claimed in claim 1 or 2, wherein the triangular part (A) has a hollow portion extending in the longitudinal direction of the filament.

4. The polyester irregular cross-sectional filaments as claimed in any of claims 1 to 3, wherein the polyester from which the filaments are formed is blended with an organic sulfonate metal salt represented by the general formula (I):



in which formula (I), R represents a member selected from alkyl group having 3 to 30 carbon atoms, and aryl and alkylaryl groups having 7 to 40 carbon atoms; M represents a member selected from alkali metal atoms and alkaline earth metal atoms, and n represents an integer of 1 when M represents a monovalent metal atom or a number of 1/2 when M represents a divalent metal atom.

5. The polyester irregular cross-sectional filaments as claimed in any of claims 1 to 4, wherein each individual filament has large thickness portions and small thickness portion alternately formed in the longitudinal direction of the filament.

6. The polyester filament yarn comprising the polyester irregular cross-sectional filaments as claimed in any of claims 1 to 5.

7. The polyester filament yarn as claimed in claim 6, wherein each polyester irregular cross-sectional filaments has large thickness portions and small thickness portions formed alternately in the longitudinal direction of the filament, and in the polyester filament yarn containing the thick and thin-type filaments, the high thickness portions are distributed at a rate of 20/m or more in the longitudinal direction of the yarn.

8. A combined polyester filament yarn comprising a filament component having a lowest shrinkage in boiling

water and consisting of the polyester irregular cross-sectional filaments as claimed in any of claims 1 to 5, and a filament component having a high shrinkage in boiling water and consisting of at least one type of polyester filaments having a higher shrinkage in boiling water than that of the polyester irregular cross-sectional filaments.

9. The combined polyester filament yarn as claimed in claim 7, wherein a difference in shrinkage in boiling water between the polyester irregular cross-sectional filaments for the filament component having the lowest shrinkage in boiling water, and the polyester filaments contained in the filament component having a high shrinkage in boiling water and having a highest shrinkage in boiling water, is 4 to 10%.

10. The combined polyester filament yarn as claimed in claim 7 or 8, wherein the polyester contained in the polyester filaments having a highest shrinkage in boiling water is a polyethylene terephthalate isophthalate and the content of isophthalic acid in the dicarboxylic acid component of the polyester is 5 to 15 molar%.

11. The combined polyester filament yarn as claimed in any of claims 8 to 10, wherein the polyester filaments having a highest shrinkage in boiling water are thick and thin type filaments having high thickness portions and low thickness portions alternately distributed in the longitudinal direction of the filaments and, in the combined polyester filament yarn containing the thick and thin type filaments mentioned above, the high thickness portions are distributed at a rate of 20/m or more in the longitudinal direction of the yarn.

12. A polyester filament fabric comprising at least one type of yarn selected from the polyester filament yarn as claimed in claim 6 and the combined polyester filament yarn as claimed in any of claims 7 to 11, and having a silk-like hand.

13. The polyester filament fabric as claimed in

claim 12, wherein the fabric is a woven fabric, the yarn is a twisted yarn having a twist multiplier of 2,500 or more, and the twisted yarns are contained as warp yarns in the woven fabric.